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File 813:PR Newswire 1987-1999/Apr 30 (c) 1999 PR Newswire Association Inc  
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File 268:Banking Info Source 1981-2004/Feb W3 (c) 2004 ProQuest Info&Learning  
File 625:American Banker Publications 1981-2004/Feb 26 (c) 2004 American Banker

Set	Items	Description
S1	4629	(CREDIT OR DEBIT OR CHECK) (10N) (CORPORATE OR HEADQUARTER OR SECTOR OR REGION??) (10N) CLEAR????
S2	57510	(CREDIT OR DEBIT OR CHECK OR VISA OR MASTERCARD) (5N) (ATM OR TELL????)
S3	179	S1 AND S2
S4	117	RD S3 (unique items) [Scanned ti, pd, kwic all]

4/9/87 (Item 15 from file: 148)

DIALOG(R)File 148:Gale Group Trade & Industry DB (c)2004 The Gale Group.  
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03711105 SUPPLIER NUMBER: 06808670 (THIS IS THE FULL  
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Why majors have the cutting edge in proprietary debit cards.

National Petroleum News, v80, n12, p34(5)

Nov, 1988

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TEXT:

Ever since the idea of consumers using their bank's automatic teller machine (ATM) cards as cash began, the so-called "cashless" society scenario has always included a partnership between retailers, banks and bank networks. Not anymore.

Major oil companies have taken charge of the debit card's destiny by gearing their multi-million dollar point of sale networks to accept proprietary debit cards--a move that bypasses regional bank networks and puts debit security and promotion in their hands.

"Now instead of trying to encourage regional bank networks to promote debit to the public, we can promote debit ourselves through our own proprietary cards," says an official with Mobil. "And having the Mobil name on the (credit-debit) card encourages brand loyalty."

Indeed, more control over promotion and strengthening brand loyalty are two major incentives for the recent proprietary debit move.

Among the majors, Exxon, Mobil, Amoco and Diamond Shamrock initiated proprietary credit-debit card programs; and the other major oil companies stand poised for the debit plunge, having already outfitted their stations with the necessary POS equipment to accept plastic.

The majors' commitment to POS has been astronomical. An estimated \$35-million has already been spent in POS equipment alone.

Over the past several years, major oil companies have built POS networks involving numerous bank links, dozens of switches, hundreds of miles of phone lines and thousands of in-station terminals that electronically authorize credit and debit as well as capture data at the blink of an eye.

The debit concept is simple. Without carrying cash, consumers can debit their checking accounts to pay for goods like gasoline, cigarettes or doughnuts with a swipe of their ATM cards.

The majors are, undeniably, the power brokers of this debit payment option. Out of all the POS cardswipe terminals accepting debit in the United States today, 40% of them belong to oil companies, according to a recent survey by the industry newsletter

POS News. The survey reported that of 43,439 terminals accepting debit cards in mid-1988, 17,292 were in service stations--up 10% from the first of the year.

The remainder belonged to supermarkets, convenience stores and "specialty stores."

A quick breakdown of numbers shows how prevalent the new proprietary debit angle already is: Exxon, about 3,400 stations accepting proprietary debit; Mobil, 5,000 stations by year's end; Amoco, with 20 test locations; and Diamond Shamrock, 863 stations.

#### Majors as bankers?

With the move to proprietary debit cards underway, the role of the majors in the evolution of plastic appears to have shifted the emphasis from retailer to banker. With a Diamond Shamrock Club Card, for instance, customers can buy not only gasoline on either credit or debit, but they can access their checking accounts, getting up to \$25 cash per day from their corner service station.

Amoco, Mobil and Exxon also offer the debit feature as an option on their "preium" credit cards.

These cards generally offer a variety of traveler's benefits as well, including road service, hotel discounts and insurance.

But besides offering customers added banking-type services, the majors also lessen their dependence on regional bank networks.

"With proprietary debit, you elmininate the bank networks and you don't have to use their bank cards," says Joe Tebo, senior manager of sales development for Arco. Tebo says the West Coast major is "looking at" the proprietary debit concept.

Oil companies taking on proprietary debit, also take on security risks usually handled by banks and their networks. Because the processing of a proprietary debit transaction can take as much as four or five days (rather than a bank network debit that can happen instantly), oil companies assume the risk of transactions beiing returned for insufficient funds.

In response, the majors are careful to offer the debit feature only to those who qualify for credit, with any debit returns being billed on the customer's credit account. They have also produced proprietary cards similar to bank network cards, requiring signatures on the backs of the cards and personal identification numbers (PINs) or security access codes.

On the surface, the majors appear to have stormed into banker's territory, offering consumers financial services through electronically equipped service stations. But the majors-as-bankers picture is not altogether true.

"We don't consider ourselves bankers," says a Mobil official. "In fact, we need the banks to process our proprietary debit transactions"

#### On-line vs ACH

To understand the evolving relationships between banks and oil companies, one must carefully examine how electronic transactions happen. Regional bank networks that offer consumers access tho their checking and savings accounts around the clock are basically known as "on-line" systems. Examples include Honor in Florida, Avail in Georgia, Tyme in Wisconsin, Interlink in California and Pulse in Texas.

These networks deduct withdrawal amounts from a person's checking account moments after he or she punches the keys and gets money from the ATM.

In other words, wherever that machine is, be it in a bank or super market or convenience store, the withdrawal information instantly zips from the machine, across phone lines to a "switching" point (generally a centrally located bank or financial network computer system), to the customer's bank.

Once there, the withdrawal information is logged in and the customer's checking account is debited by that withdrawal amount. The debit goes back through phone lines to the switching point and then through more phone lines to die ATM, which will then spit out the paper currency.

Similarly, in a debit transaction at the point-of-sale, the amount of cash needed for a purchase is instantly transferred from a customer's account and into the retailers' bank account.

To accept on-line debit transactions, retailers must ink a deal with at least one of these networks. Some networks may charge retailers a per transaction fee, others may not, with most retailer-bank arrangements differing from \*region\* to \*region\*.

The alternative to on-line \*debit\* is processing transactions through the Automated \*Clearing\* House (ACH). Also known as "offline," this system generally "batches" the day's transaction information at the store and sends that batch to a processing bank. That bank will handle the information in a similar way to the on-line systems, but uses both paper and electronics and may take four or five days to complete.

"The best way to look at an ACH transaction is to see it as an electronic check," says one bank source. "But where a ACH transaction may take four or five days, a paper check may take double that time to clear."

Cost to the retailer is generally not the issue. If transaction volumes are high, online can cost an average of 17cts per transaction, off-line an average of 20cts. But in lower volume stations on-line becomes 54cts compared to 35cts for ACH.

Comparing averages is difficult because sometimes the merchant pays the transaction costs, sometimes banks and sometimes costs are passed onto the consumer.

"It's hard to talk in average transaction costs for POS," says one ACH expert. "It's like having your feet in die refrigerator and your head in the oven; on one end of the country you've got a retailer paying nothing and on the other, he's paying \$1.50."

Indeed, depending on the retailer's relationship with the bank, the cost differential may mean a lot or nothing at all. Mobil, for instance, pays nothing to the bank networks it has signed up with, believing that as a retailer, it is offering bank networks its own network of terminals. But Mobil does pay for ACH transactions, according to a Mobil spokesman.

OR companies have found, however, that to offer a proprietary debit card, they must go through the ACH.

"I don't know of any other way to get a proprietary debit card than through ACH," says a Diamond Shamrock official.

Mobil decided to foot the bill for ACH in part because customers, in company-conducted surveys, say they would like a debit option for their "premium" credit card, as well.

Wholesale banking

POS processing through ACH is generally new to retailers. And one bank, Chase Manhattan in New York, has garnered the business of the four major oil companies presently involved in proprietary debit.

The oil company move to Chase began with Exxon in 1984, with the rest following suit. Diamond Shamrock, for example, sought out Chase to handle its processing because of Chase's experience with the oil industry.

Jim Hopes, vice president of Chase and in charge of its ACH system, says Chase's system has the ability to "scrub" data, or clean mistakes in the transactions that may have been made through manual entry. (Often in an ACH transaction, the information may be sent electronically, but returned on paper and then converted back again into electronics.)

Chase began its ACH program back in 1972 with insurance payments and ironed out a system of computers that now offers this "scrubbing" ability.

"[Chase] has more ACH transaction volume than the next four banks combined," says Hopes. "We're aggressively marketing the service and expect to have more of the petroleum business shortly."

Running a far second in the ACH race is Bank of America on the West Coast, which is said to be scrambling for gains against Chase.

The choice of major oil companies to process through ACH has ruffled the feathers of established bank networks, with oil company executives reporting a "mixed" reaction from many of them.

"It's a matter of the retail end of banks competing against the wholesale end," explains Bill Nelson, senior director of network services for the National Automated Clearing House Assn. (NACHA), of Washington, D.C.

Nelson says that bank networks were formed by the retail departments of the nation's banks, because the service was tailored to consumers.

The ACH network of banks and linkups developed basically for the "wholesale" end of banking. ACH is still largely used to process corporate payroll and insurance transactions.

In recent years, these "back room" ACH departments like those at Chase and Bank of America in California have begun soliciting POS business.

Bank network people say most bank ACHs don't have the systems necessary to handle POS transactions. Chase, for instance, is unique in that it has beefed up its ACH department, hiring full-time employees and making significant investments in computers and high-speed telecommunications lines.

Nelson, of NACHA, believes on-line and off-line transactions will "complement each other." Mobil, for instance, continues its bank network relationships, accepting both the regional \*ATM\* cards and its own proprietary \*debit\* card.

Some oil company execs don't see such a happy marriage, however.

Comparing credit, debit

For decades--50 or 60 years in some cases--oil companies have used credit to foster brand loyalty (see related story on page 38).

Companies have found that all things being equal, proprietary credit cards are a big lure.

"These (credit) customers typically fill up rather than purchase five dollars worth of gasoline, and have proven to be a loyal customer segment," says one major oil company executive.

Oil companies also take nationally offered credit cards, like Visa, MasterCard, American Express, etc., but prefer their proprietary cards for obvious reasons. "A customer can take a Visa to any station," says one industry observer, "but they can only use a Shell credit card at a Shell location."

In fact, the majors have found the bulk of their credit purchases coming from proprietary cards. Texaco, for example, says 34% of its volume is purchased with its proprietary card and 6% is purchased through Visa, MasterCard and similar bank, credit cards.

Some oil company executives believe similar ratios will occur with proprietary debit.

"Most debit transactions today are made with bank ATM cards," says one oil company executive, "but in time the proportions will probably shift to a majority of debit purchases being from proprietary cards."

#### Consumer ignorance, fear

Still, before any scales start tipping toward proprietary debit use, two things must be overcome: customer ignorance and fear.

To attack consumer ignorance, Arco has been spending thousands of dollars on television advertising, beginning its commercials two years ago, and rolling out its latest earlier this year, according to Tebo.

The latest commercial shows a customer explaining how to use Arco's PayPoint system and saying how he didn't have to use the cash in his pocket to pay for the transaction.

"If retailers have their own debit card, then they have more reason to do television and radio advertising to promote debit," Chase's Hopes says.

Many observers believe that putting the debit destiny into the hands of retailers will encourage the biginvestments in consumer education that the debit move needs.

"We are satisfied with the growth of debit transaction volume," says Tebo. "But we still want more people to use the system."

One Mobil spokesman says that with proprietary debit, the company can target its own credit cardholder base and offer them one more incentive to fill up at their station. Industry sources say a major oil company can easily have five million proprietary credit cardholders.

Still, the average "loyal" customer will be loyal to a brand only 40% of the time, according to one observer. So if another incentive is added to the proprietary credit card and that percentage rises to 50%, "a huge immpact will be made on that company's bottom line," the observer says.

Hopes says the clouds of consumer ignorance can certainly clear quicker if retailers begin promoting proprietary debit cards, educating the consumer about the general idea of paying for goods with debit.

He says that while appealing to credit card holders through direct mailers is one thing, it is the person who goes for the cash price and isn't willing to pay the extra 4cts for credit that direct debit will appeal to.

This market of customers is generally well-educated, and sometimes mistakenly identified as "yuppies."

"Senior citizens like using their ATM cards too," Hopes says. "They don't have to carry that much cash around and worry about being robbed."

While transaction numbers are hush-hush among marketers, most consider consumer acceptance "good, but canal ways be better."

Phoenix-based Circle K, which has nearly one-fourth of its 4,097 C-stores on draft capture, says customer reaction is "mixed." Response has been a region by region story, according to Anita Best, electronic services manager.

In some regions, banks are more likely to help retailers promote debit, in others, not so, Best says. And merchant-bank promotion makes a significant impact on consumer response, she says.

But whoever ends up footing the bill for promotion, be it the retailers or the banks, the bottom line is selling the consumer on "'Debit' is a hard word to market," notes the Mobil spokesman.

Not only is awareness a problem, people also tend to get worried when others have access to their personal bank accounts, Hopes says. "But once they get accustomed to the idea or realize that it's similar to their employer sending their paychecks directly into their accounts, they get over that fear," Hopes says.

#### The jobber connection

So where does the jobber fit in? Simply put, jobbers are threads in a debit blanket that the major oil companies, combined with other retail groups, are using to cover the country.

Many jobbers have been offered POS packages from their suppliers, who give them the option of leasing the equipment at between \$50 and \$100 a month per location, or buying the equipment at an average cost of between \$1,500 and \$2,000. (On the high end, equipment costs can hit as much as \$20,000 per location if island-mounted terminals are involved.)

Terminal manufacturers say the oil companies are now looking to develop less expensive equipment, hardware that may have less capability, but would be more affordable to jobbers.

Jobber packages have already been rolled out. Diamond Shamrock for example offers its jobbers a POS package, and as of midsummer, had 327 jobber-operated locations on its POS system.

Typically, a major oil company-operated station will have the following:

- \* credit authorization
- \* draft capture
- \* debit acceptance (also considered draft capture)
- \* check authorization
- \* electronic pricing, company correspondence (usually needing a display screen and printer)
- \* ticket printer (which breaks down the purchase by product)
- \* electronic funds transfer (allowing the dealer to pay for fuel deliveries electronically)

Paul Siegenthaler, marketing manager for DataCard Corp., says the majors are in the second of two phases with POS terminals. The first phase involved setting up the

POS network able to authorize credit at their stations. The second phase is now gearing up the equipment to accept debit and to electronically communicate and keep tabs on such things as product inventory at their many locations.

For independents, the question of proprietary debit can be looked at by asking another question: Is a proprietary credit card in my future?

Quite simply, debit is at too early a stage to justify hardware costs. Most oil companies, like Mobil and Amoco, piggybacked debit onto their improvements in credit card processing.

If a business is well-trenched, with enough locations out there so that offering a credit card is a viable lure to customers, then a jobber must decide if he can carry credit. Arco dropped its credit card back in 19 84 because it cost 3cts gal. to operate, a cost they could no longer carry.

Besides costs, a jobber inherits the information business. For example, since there is float time involved in proprietary debit, a marketer would have to maintain among other things a "negative file" of bad card numbers.

Still, for some marketers, the benefits of increased customer loyalty and additional payment options may outweigh the burdens.

And for debit to really begin to move, more independents, majors and other types of retailers have got to give POS the nod, and then aggressively promote it to the public, industry sources believe.

The more gasoline stations, convenience stores and supermarkets that offer POS systems, the more debit becomes a part of the retail setting. And once people begin seeing the debit option appearing in every shoe store, grocery store or sporting goods shop, many experts agree that debit will become a payment option that all retailers will have to face.

"We're at the start of a growth curve," says Hopes. "I see things happening in the next two years." Some Majors Plug POS For Credit, Not Debit Phillips, Texaco, Shell and Chevron have all plunged millions of dollars into building POS networks through their many locations, strictly to increase the efficiency of their credit card processing and stopping shy of debit.

Of the four oil companies, Chevron is the only one gearing up for the debit option, possibly by the end of the year.

Chevron's Robert Olmstead, manager of Travel Card Administration, says, "We're very close to coming out with some sort" of debit. He says, only "inhouse work" has been done, but that an announcement is at hand.

Customer response has been a barometer for the oil companies, but as one spokesman for Phillips says, "We have yet to get customer demand or usage" to justify debit.

Another reason behind these majors' slow move to debit could lie in the history of these company credit cards. Many have been around over 50 years, and institutions are slow to change,

Company credit cards began as paper and evolved into today's plastic with a magnetic stripe on the back.

Considering how old the Texaco credit card is-in existence since 1935-it remained surprisingly the same until 1985 when the company offered Star Member, a

\$20-a-year card that offers automobile, air and hotel discounts, emergency cash and answering services.

Shell has offered its credit card since the 1920s and has in the past decade altered its features as well as coming up with a few new cards.

In 1982, Shell gained two million new accounts with a promotion involving its credit card and just last year invited the use of other oil company credit cards (Mobil, Amoco, Chevron and Exxon) at Shelllocations. This promotion garnered "several hundred thousand" more accounts.

The Signature and fleet cards are two other Shell electives, the former designed for expanded user features and the latter catering to multiple-vehicle companies. There is no charge for the basic Shell card, a \$20 annual fee for the Signature card and a payment for the fleet card only if there is "detailed" billing involved.

Still, no matter how the credit card changes, it has proven to build a "loyal customer segment," according to oil executives.

And now that POS has made the transactions more efficient, credit cards will continue to be a part of the majors' marketing schemes for quite some time to come.

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US-PAT-NO: 5220501

DOCUMENT-IDENTIFIER: US 5220501 A

TITLE: Method and system for remote delivery of retail banking services

DATE-ISSUED: June 15, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lawlor; Matthew P.	Washington	DC	N/A	N/A
Carmody; Timothy E.	McLean	VA	N/A	N/A

US-CL-CURRENT: 705/40; 379/93.18 ; 380/29 ; 705/42 ; 705/43 ; 705/70 ; 705/77 ; 902/24

ABSTRACT: A practical system and method for the remote distribution of financial services (e.g., home banking and bill-paying) involves distributing portable terminals to a user base. The terminals include a multi-line display, keys "pointer to" lines on the display, and additional keys. Contact is established between the terminals and a central computer operated by a service provider, preferably over a dial-up telephone line and a packet data network. Information exchange between the central computer and the terminal solicits information from the terminal user related to requested financial services (e.g., for billpaying, the user provides payee selection and amount and his bank account PIN number). The central computer then transmits a message over a conventional ATM network debiting the user's bank account in real time, and may pay the specified payees the specified amount electronically or in other ways as appropriate. Payments and transfers may be scheduled in advance or on a periodic basis. Because the central computer interacts with the user's bank as a standard POS or ATM network node, no significant software changes are required at the banks' computers. The terminal interface is extremely user-friendly and incorporates some features of standard ATM user interfaces so as to reduce new user anxiety.

51 Claims, 50 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 44

----- KWIC -----

Brief Summary Text - BSTX: Early home banking efforts discovered that users liked using the systems to pay bills. They had only limited interest in other bank and videotext services, so the present invention has reduced its delivery costs by specializing in billpaying. While the present invention provides billpaying services, customers may also use the system to better manage their money. More sophisticated active users may better manage their money by, for example, checking their account balances, viewing payment records, transferring funds between accounts, future dating of bills and funds transfers, and requesting other bank services. Future dating of bills minimizes users float, and users may future date funds transfer to maximize interest bearing balances. Transferring funds between banks is possible with immediate debit or credit within one day (depending upon the ATM network clearing procedures). The present invention thus provides a terminal designed to accommodate additional financial services in the event that users or banks demand (and are willing to pay for) more services. These may include comparative mortgage and CD quotes, tax deduction summaries, loan applications, electronic billing, third party billing, family budgeting tools, tax planning, and insurance services. Limited alphabet-based services (e.g.

telephone directory) are also feasible with the terminals of the preferred embodiment and the terminal has the facility to add on an alphabetic keyboard.

**Detailed Description Text - DETX:** When bill payment is selected from the main menu of services the user's account balances is presented, his terminal 54 displays a unique list of payees (preferably specified beforehand by the user in response to a questionnaire or the like). After selecting one payee, the amount of payment is entered on the keypad 114 and the figures appear on display 102 (but are not transmitted until a buffer is ready for transmission). The amount (preferably encrypted) is transmitted to the central processor 52. The transmission is logged in on a log file, the transaction is entered in transaction files by the bill payer module, and account information is obtained from the appropriate payee (payee number, payment instructions/remittance method, payee address and deposit institution) and user account files (the user's name, address, user account number at payee, payment application) stored on mass storage device 84. A confirmation message is displayed to the terminal user indicating that his request for bill payment has been received and logged by the central processor.

**Detailed Description Text - DETX:** After a payment has been made, a confirmation is received for electronic payments, a confirmation entry is placed on the customers file and the transactions file. Similarly, another confirmation is entered upon sending paper payments. When the user views his statement of transactions (his online statement), the data and amount of payment is available for his information.

**Detailed Description Text - DETX:** The final selection permits the user to SIGNOFF the terminal, or move to another account at the same bank or a different bank. If the terminal session is ended, a session number and message is transmitted to the terminal (the session number is stored by the central processor and is used for customer servicing and reference). Actual bank debit and credit processing that was not initiated during the session is completed after the terminal session ends. The terminal detects an end of session code and the modem is commanded to break the communications. If the terminal session ends abnormally due to a failure in the communications link, those transactions that were not entered up to the point of confirmation are not executed by the central processor. The terminal user, once receiving indications that the communications link is down, must push the ON key to reestablish a communications link and continue with his remaining transactions. He can review his online statement of transactions to conform what transactions have been accepted by the central processor.

**Detailed Description Text - DETX:** Referring now more particularly to FIG. 21A-21C, central computer 52 sends to terminal 54 a display format announcing that "account information service" is being provided and then present the user with various options to select (e.g., "account balance", "statement of activity", and "other bank information"). If the user selects the account balance option (as tested for by decision block 950), the preferred embodiment central computer 52 transmits the balance of the "primary" account (block 952). This "primary" account designated by the user in advance (i.e., when he first subscribes to the remote financial distribution service or when he logs onto his remote terminal at the beginning of the current session) and is probably the account the balance of which the user is interested in. Following this account balance display,

central computer 52 transmits an additional display screen to terminal 54 presenting the user with the following additional options: "balance for other account", "access other services" and "end this online banking session". If the user then selects the "other account balance" option (tested for by decision block 954), central computer 52 controls terminal display 102 to display a listing of the user's other accounts (block 956) and permits the user to scroll through the list to select another account (blocks 958-962). If the end of the list is reached (tested for by decision block 962), control is returned to the "account balance" prompt (block 950). If the user selects another account, on the other hand, central computer 52 transmits a designation of this account along with its balance (and, if necessary, generates a request on ATM's network 66 obtaining this account balance) (block 964). A request for "other services" in the preferred embodiment is handled by returning the user to the main menu routine 388 (blocks 966-968), while an "end session" request is handled by calling the SESSEXIT routine to be discussed shortly (blocks 970,972).

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National Petroleum News, v80, n12, p34(5)

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Amoco, Mobil and Exxon also offer the debit feature as an option on their "preium" credit cards.

These cards generally offer a variety of traveler's benefits as well, including road service, hotel discounts and insurance.

But besides offering customers added banking-type services, the majors also lessen their dependence on regional bank networks.

"With proprietary debit, you eliminate the bank networks and you don't have to use their bank cards," says Joe Tebo, senior manager of sales development for Arco. Tebo says the West Coast major is "looking at" the proprietary debit concept.

Oil companies taking on proprietary debit, also take on security risks usually handled by banks and their networks. Because the processing of a proprietary debit transaction can take as much as four or five days (rather than a bank network debit that can happen instantly), oil companies assume the risk of transactions beiing returned for insufficient funds.

In response, the majors are careful to offer the debit feature only to those who qualify for credit, with any debit returns being billed on the customer's credit account. They have also produced proprietary cards similar to bank network cards, requiring signatures on the backs of the cards and personal identification numbers (PINs) or security access codes.

On the surface, the majors appear to have stormed into banker's territory, offering consumers financial services through electronically equipped service stations. But the majors-as-bankers picture is not altogether true.

"We don't consider ourselves bankers," says a Mobil official. "In fact, we need the banks to process our proprietary debit transactions"

#### On-line vs ACH

To understand the evolving relationships between banks and oil companies, one must carefully examine how electronic transactions happen. Regional bank networks that offer consumers access tho their checking and savings accounts around the clock are basically known as "on-line" systems. Examples include Honor in Florida, Avail in Georgia, Tyme in Wisconsin, Interlink in California and Pulse in Texas.

These networks deduct withdrawal amounts from a person's checking account moments after he or she punches the keys and gets money from the ATM.

In other words, wherever that machine is, be it in a bank or super market or convenience store, the withdrawal information instantly zips from the machine, across phone lines to a "switching" point (generally a centrally located bank or financial network computer system), to the customer's bank.

Once there, the withdrawal information is logged in and the customer's checking account is debited by that withdrawal amount. The debit goes back through phone lines to the switching point and then through more phone lines to die ATM, which will then spit out the paper currency.

Similarly, in a debit transaction at the point-of-sale, the amount of cash needed for a purchase is instantly transferred from a customer's account and into the retailers' bank account.

To accept on-line debit transactions, retailers must ink a deal with at least one of these networks. Some networks may charge retailers a per transaction fee, others may not, with most retailer-bank arrangements differing from \*region\* to \*region\*.

The alternative to on-line \*debit\* is processing transactions through the Automated \*Clearing\* House (ACH). Also known as "offline," this system generally "batches" the day's transaction information at the store and sends that batch to a processing bank. That bank will handle the information in a similar way to the on-line systems, but uses both paper and electronics and may take four or five days to complete.

"The best way to look at an ACH transaction is to see it as an electronic check," says one bank source. "But where a ACH transaction may take four or five days, a paper check may take double that time to clear."

Cost to the retailer is generally not the issue. If transaction volumes are high, online can cost an average of 17cts per transaction, off-line an average of 20cts. But in lower volume stations on-line becomes 54cts compared to 35cts for ACH.

Comparing averages is difficult because sometimes the merchant pays the transaction costs, sometimes banks and sometimes costs are passed onto the consumer.

"It's hard to talk in average transaction costs for POS," says one ACH expert. "It's like having your feet in die refrigerator and your head in the oven; on one end of the country you've got a retailer paying nothing and on the other, he's paying \$1.50."

Indeed, depending on the retailer's relationship with the bank, the cost differential may mean a lot or nothing at all. Mobil, for instance, pays nothing to the bank networks it has signed up with, believing that as a retailer, it is offering bank networks its own network of terminals. But Mobil does pay for ACH transactions, according to a Mobil spokesman.

OR companies have found, however, that to offer a proprietary debit card, they must go through the ACH.

"I don't know of any other way to get a proprietary debit card than through ACH," says a Diamond Shamrock official.

Mobil decided to foot the bill for ACH in part because customers, in company-conducted surveys, say they would like a debit option for their "premium" credit card, as well.

Wholesale banking

POS processing through ACH is generally new to retailers. And one bank, Chase Manhattan in New York, has garnered the business of the four major oil companies presently involved in proprietary debit.

The oil company move to Chase began with Exxon in 1984, with the rest following suit. Diamond Shamrock, for example, sought out Chase to handle its processing because of Chase's experience with the oil industry.

Jim Hopes, vice president of Chase and in charge of its ACH system, says Chase's system has the ability to "scrub" data, or clean mistakes in the transactions that may have been made through manual entry. (Often in an ACH transaction, the information may be sent electronically, but returned on paper and then converted back again into electronics.)

Chase began its ACH program back in 1972 with insurance payments and ironed out a system of computers that now offers this "scrubbing" ability.

"[Chase] has more ACH transaction volume than the next four banks combined," says Hopes. "We're aggressively marketing the service and expect to have more of the petroleum business shortly."

Running a far second in the ACH race is Bank of America on the West Coast, which is said to be scrambling for gains against Chase.

The choice of major oil companies to process through ACH has ruffled the feathers of established bank networks, with oil company executives reporting a "mixed" reaction from many of them.

"It's a matter of the retail end of banks competing against the wholesale end," explains Bill Nelson, senior director of network services for the National Automated Clearing House Assn. (NACHA), of Washington, D.C.

Nelson says that bank networks were formed by the retail departments of the nation's banks, because the service was tailored to consumers.

The ACH network of banks and linkups developed basically for the "wholesale" end of banking. ACH is still largely used to process corporate payroll and insurance transactions.

In recent years, these "back room" ACH departments like those at Chase and Bank of America in California have begun soliciting POS business.

Bank network people say most bank ACHs don't have the systems necessary to handle POS transactions. Chase, for instance, is unique in that it has beefed up its ACH department, hiring full-time employees and making significant investments in computers and high-speed telecommunications lines.

Nelson, of NACHA, believes on-line and off-line transactions will "complement each other." Mobil, for instance, continues its bank network relationships, accepting both the regional \*ATM\* cards and its own proprietary \*debit\* card.

Some oil company execs don't see such a happy marriage, however.

Comparing credit, debit

For decades--50 or 60 years in some cases--oil companies have used credit to foster brand loyalty (see related story on page 38).

Companies have found that all things being equal, proprietary credit cards are a big lure.

"These (credit) customers typically fill up rather than purchase five dollars worth of gasoline, and have proven to be a loyal customer segment," says one major oil company executive.

Oil companies also take nationally offered credit cards, like Visa, MasterCard, American Express, etc., but prefer their proprietary cards for obvious reasons. "A customer can take a Visa to any station," says one industry observer, "but they can only use a Shell credit card at a Shell location."

In fact, the majors have found the bulk of their credit purchases coming from proprietary cards. Texaco, for example, says 34% of its volume is purchased with its proprietary card and 6% is purchased through Visa, MasterCard and similar bank, credit cards.

Some oil company executives believe similar ratios will occur with proprietary debit.

"Most debit transactions today are made with bank ATM cards," says one oil company executive, "but in time the proportions will probably shift to a majority of debit purchases being from proprietary cards."

#### Consumer ignorance, fear

Still, before any scales start tipping toward proprietary debit use, two things must be overcome: customer ignorance and fear.

To attack consumer ignorance, Arco has been spending thousands of dollars on television advertising, beginning its commercials two years ago, and rolling out its latest earlier this year, according to Tebo.

The latest commercial shows a customer explaining how to use Arco's PayPoint system and saying how he didn't have to use the cash in his pocket to pay for the transaction.

"If retailers have their own debit card, then they have more reason to do television and radio advertising to promote debit," Chase's Hopes says.

Many observers believe that putting the debit destiny into the hands of retailers will encourage the biginvestments in consumer education that the debit move needs.

"We are satisfied with the growth of debit transaction volume," says Tebo. "But we still want more people to use the system."

One Mobil spokesman says that with proprietary debit, the company can target its own credit cardholder base and offer them one more incentive to fill up at their station. Industry sources say a major oil company can easily have five million proprietary credit cardholders.

Still, the average "loyal" customer will be loyal to a brand only 40% of the time, according to one observer. So if another incentive is added to the proprietary credit card and that percentage rises to 50%, "a huge immpact will be made on that company's bottom line," the observer says.

Hopes says the clouds of consumer ignorance can certainly clear quicker if retailers begin promoting proprietary debit cards, educating the consumer about the general idea of paying for goods with debit.

He says that while appealing to credit card holders through direct mailers is one thing, it is the person who goes for the cash price and isn't willing to pay the extra 4cts for credit that direct debit will appeal to.

This market of customers is generally well-educated, and sometimes mistakenly identified as "yuppies."

"Senior citizens like using their ATM cards too," Hopes says. "They don't have to carry that much cash around and worry about being robbed."

While transaction numbers are hush-hush among marketers, most consider consumer acceptance "good, but canal ways be better."

Phoenix-based Circle K, which has nearly one-fourth of its 4,097 C-stores on draft capture, says customer reaction is "mixed." Response has been a region by region story, according to Anita Best, electronic services manager.

In some regions, banks are more likely to help retailers promote debit, in others, not so, Best says. And merchant-bank promotion makes a significant impact on consumer response, she says.

But whoever ends up footing the bill for promotion, be it the retailers or the banks, the bottom line is selling the consumer on "'Debit' is a hard word to market," notes the Mobil spokesman.

Not only is awareness a problem, people also tend to get worried when others have access to their personal bank accounts, Hopes says. "But once they get accustomed to the idea or realize that it's similar to their employer sending their paychecks directly into their accounts, they get over that fear," Hopes says.

#### The jobber connection

So where does the jobber fit in? Simply put, jobbers are threads in a debit blanket that the major oil companies, combined with other retail groups, are using to cover the country.

Many jobbers have been offered POS packages from their suppliers, who give them the option of leasing the equipment at between \$50 and \$100 a month per location, or buying the equipment at an average cost of between \$1,500 and \$2,000. (On the high end, equipment costs can hit as much as \$20,000 per location if island-mounted terminals are involved.)

Terminal manufacturers say the oil companies are now looking to develop less expensive equipment, hardware that may have less capability, but would be more affordable to jobbers.

Jobber packages have already been rolled out. Diamond Shamrock for example offers its jobbers a POS package, and as of midsummer, had 327 jobber-operated locations on its POS system.

Typically, a major oil company-operated station will have the following:

- \* credit authorization
- \* draft capture
- \* debit acceptance (also considered draft capture)
- \* check authorization
- \* electronic pricing, company correspondence (usually needing a display screen and printer)
- \* ticket printer (which breaks down the purchase by product)
- \* electronic funds transfer (allowing the dealer to pay for fuel deliveries electronically)

Paul Siegenthaler, marketing manager for DataCard Corp., says the majors are in the second of two phases with POS terminals. The first phase involved setting up the

POS network able to authorize credit at their stations. The second phase is now gearing up the equipment to accept debit and to electronically communicate and keep tabs on such things as product inventory at their many locations.

For independents, the question of proprietary debit can be looked at by asking another question: Is a proprietary credit card in my future?

Quite simply, debit is at too early a stage to justify hardware costs. Most oil companies, like Mobil and Amoco, piggybacked debit onto their improvements in credit card processing.

If a business is well-trenched, with enough locations out there so that offering a credit card is a viable lure to customers, then a jobber must decide if he can carry credit. Arco dropped its credit card back in 19 84 because it cost 3cts gal. to operate, a cost they could no longer carry.

Besides costs, a jobber inherits the information business. For example, since there is float time involved in proprietary debit, a marketer would have to maintain among other things a "negative file" of bad card numbers.

Still, for some marketers, the benefits of increased customer loyalty and additional payment options may outweigh the burdens.

And for debit to really begin to move, more independents, majors and other types of retailers have got to give POS the nod, and then aggressively promote it to the public, industry sources believe.

The more gasoline stations, convenience stores and supermarkets that offer POS systems, the more debit becomes a part of the retail setting. And once people begin seeing the debit option appearing in every shoe store, grocery store or sporting goods shop, many experts agree that debit will become a payment option that all retailers will have to face.

"We're at the start of a growth curve," says Hopes. "I see things happening in the next two years." Some Majors Plug POS For Credit, Not Debit Phillips, Texaco, Shell and Chevron have all plunged millions of dollars into building POS networks through their many locations, strictly to increase the efficiency of their credit card processing and stopping shy of debit.

Of the four oil companies, Chevron is the only one gearing up for the debit option, possibly by the end of the year.

Chevron's Robert Olmstead, manager of Travel Card Administration, says, "We're very close to coming out with some sort" of debit. He says, only "inhouse work" has been done, but that an announcement is at hand.

Customer response has been a barometer for the oil companies, but as one spokesman for Phillips says, "We have yet to get customer demand or usage" to justify debit.

Another reason behind these majors' slow move to debit could lie in the history of these company credit cards. Many have been around over 50 years, and institutions are slow to change,

Company credit cards began as paper and evolved into today's plastic with a magnetic stripe on the back.

Considering how old the Texaco credit card is-in existence since 1935-it remained surprisingly the same until 1985 when the company offered Star Member, a

\$20-a-year card that offers automobile, air and hotel discounts, emergency cash and answering services.

Shell has offered its credit card since the 1920s and has in the past decade altered its features as well as coming up with a few new cards.

In 1982, Shell gained two million new accounts with a promotion involving its credit card and just last year invited the use of other oil company credit cards (Mobil, Amoco, Chevron and Exxon) at Shelllocations. This promotion gamered "several hundred thousand" more accounts.

The Signature and fleet cards are two other Shell electives, the former designed for expanded user features and the latter catering to multiple-vehicle companies. There is no charge for the basic Shell card, a \$20 annual fee for the Signature card and a payment for the fleet card only if there is "detailed" billing involved.

Still, no matter how the credit card changes, it has proven to build a "loyal customer segment," according to oil executives.

And now that POS has made the transactions more efficient, credit cards will continue to be a part of the majors' marketing schemes for quite some time to come.

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\*Financial\* \*statement\* representations in acquisition \*transactions\*.

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Almost all business transactions are based on financial information. Generally, the financial information is presented in the form of financial statements, which summarize and formally present the financial results of a company's operations and its financial position in accordance with generally accepted accounting principles (GAAP). In many business transactions, the legal agreement between the parties includes written representations concerning these financial statements. The form of these representations has become standardized to the point of being what many think of as "boilerplate."

These representations generally are effective in providing reasonable assurances to the parties in most transactions. It is the authors' view, however, that in acquisition transactions, the normal form of representation does not adequately serve the needs of the parties. Indeed, it can become a source of conflict and ultimately litigation. This is because the nature of financial statements--and the underlying theory of contemporary audit practice--do not readily lend themselves to these kinds of transactions. Specifically, the notion that financial statements are presented for the general purpose user, and the accounting and audit concepts of materiality, present issues that are not adequately addressed in the acquisition context by the normal financial statement representations.

GENERAL PURPOSE FINANCIAL STATEMENTS

Accounting theory contemplates that financial statements are prepared for the "general purpose user." While the literature does not define the general purpose user, it does identify certain characteristics: an assumption that the user has a reasonable understanding of business and economic activities and is willing to study the information with reasonable diligence. (1) Examples of general purpose users include existing and potential investors, creditors, financial rating services and the general business press.

Some users of financial statements, however, have particularized needs that a general purpose financial statement does not fully address. For example, a mortgage lender has a need for property appraisals and other detailed financial information that general purpose financial statements would not normally include, and that an auditor guided by generally accepted auditing standards would not necessarily address. Similarly, a financing agency that is lending against receivables and/or inventory would

have specific needs with respect to the assets against which it is lending that a general purpose \*financial\* statement might not meet.

As the \*Financial\* \*Accounting\* \*Standards\* \*Board\* (\*FASB\*) has indicated, "some useful information is better provided by \*financial\* statements and some is better provided, or can only be provided, by means of financial reporting other than financial statements." (2) Even where the financial statements provide relevant information, both the level of detail provided and the precision of the information are aimed at the general purpose user. For that reason, the auditor's report is limited to an expression of opinion as to presentation of the financial statements "as a whole"; the auditor does not normally give any opinion with respect to specific line items in the balance sheet or income statement. Thus, the user with specific concerns about inventory should not expect to get the degree of assurance that he might need in order to satisfy his particular objectives from the inventory line item in a general purpose financial statement.

Contemporary business practice recognizes this distinction. It is common for factors and others who lend against receivables to undertake their own detailed examination of a company's accounts receivable, and to obtain the right to conduct regular examinations designed to meet their needs. Similarly, most real estate lenders would not consider a loan transaction without obtaining specific appraisals of the properties to support the credit facility.

#### MATERIALITY

A second fundamental concept in financial statement presentation is the notion of materiality: "fair presentation" of the financial statements contemplates that the financial statements taken as a whole will not contain any material errors or misstatements. In a rare consonance of views, the legal definition of materiality is consistent with that normally used by accountants: information is material if there is a substantial likelihood that a reasonable investor would consider it important in making his or her investment decision. (3)

While accounting and auditing literature always made materiality a key issue in financial presentation, that concept was not always explicit in the information furnished to the financial statement user. It was for this reason, among others, that the American Institute of Certified Public Accountants revised the standard form of auditor's report in 1988. The opinion paragraph of the standard report now states:

In our opinion, the financial statements . . . present fairly, in all material respects, the financial position of the company as of , 19 and the results of its operations and its cash flows for the year then ended in conformity with generally accepted accounting principles. (Emphasis supplied.)

For the general purpose user, the concept of materiality is generally easy to understand, even though there can be disagreements as to when the "threshold" of materiality is crossed. For example, consider a company that has revenues of \$100 million a year and whose net income over the past three years has varied between \$8 and \$10 million per year. Most users would not be concerned to learn that the actual net income in any give year was \$100,000 more or \$100,000 less, although users might disagree as that number approached \$300,000, \$400,000 or \$500,000.

In contemporary audit theory, however, materiality plays an important role that users do not necessarily understand. Materiality for the auditor not only identifies the

range of possible errors or misstatements that he is prepared to "pass," but also determines the scope and extent of testing to be performed. (4) Thus, judgments as to materiality made at the outset of the audit process will help determine both methodology and scope as well as the measure against which results will be evaluated.

#### MATERIALITY AND THE SPECIAL PURPOSE USER

It is at the intersection between the concept of the general purpose user of financial statements and the concept of materiality that issues can arise that are not generally appreciated or understood. For purposes of exploring this issue, let us assume the following financial statements for Universal Widget Company:

[TABULAR DATA OMITTED]

Universal Widget and Subsidiaries

#### SUMMARY CONSOLIDATED STATEMENTS OF INCOME

(000's omitted)

	1990	1989	1988
Net Sales	\$101,250	\$98,500	
Total Expenses	72,000	70,000	68,500
Net Income	\$ 10,200	\$ 9,500	\$ 8,200

With revenues of approximately \$100 million a year and net income of \$8 to \$10 million a year, the auditors have used a materiality level of \$400,000 to \$500,000 during the past three years. This means that they have planned the scope of their procedures so that any misstatement is likely to be less than that amount for the financial statements taken as a whole. Applying that standard to net income, for example, there might be differences aggregating \$500,000 in any year without affecting the auditor's opinion regarding fair presentation of the financial statements.

The impact of this materiality level also affects the nature of the evaluation made with respect to components of the financial statements. For example, the auditor might conclude that a possible overstatement of inventory (and income) of \$1,000,000 existed in 1990; however, because of other errors that have the effect of understating accounts receivable (and income) by \$600,000, the auditor might conclude that no adjustment is necessary. Under these circumstances, the auditor could conclude that the financial statements taken as a whole were not materially misstated, even though he might not be in a position to reach that conclusion with respect to inventory or receivables alone.

#### ACQUISITION TRANSACTIONS AS SPECIAL PURPOSE USERS

Let us now assume that Consolidated Industries decides that it is interested in entering the widget business and proposes to acquire Universal Widget shortly after the audited financial statements of Universal Widget are issued. After reviewing Universal's operations and financial statements, and after much negotiation, Consolidated has agreed to pay \$204 million for Universal, based on 20 X 1990 net income. The acquisition agreement contains the following representations:

1. The financial statements of the Company are true and correct in all material respects and fairly present its financial position as of December 31, 1990 and the results of its operations for each of the three years in the period ended December 31, 1990.

2. The Company's inventories of \$23 million at December 31, 1990 were usable and saleable in the ordinary course of business, and were valued at lower of cost or market (using the first-in, first-out method of accounting); except for reserves reflected

on the balance sheet at December 31, 1990, no material adjustments to the value of such inventory were required, whether for obsolescence, reduction to market value or other causes.

3. The Company's accounts receivable of \$18 million, as reflected on the balance sheet at December 31, 1990 were good and collectible obligations of the respective account debtors, and no adjustments or allowances for bad debt or uncollectibility were required beyond those reflected on the financial statements at December 31, 1990.

Many acquisition transactions result in frustration, disappointment and, ultimately, litigation. (5) The seeds for that frustration may well be present in the financial statement representations. The following examines a few of these seeds in the hypothetical Universal Widget acquisition.

#### NET INCOME

For the general purpose user of a financial statement, a steady or growing net income in the \$8 to \$10 million range would not be materially different whether it was actually \$10,200,000 or \$9,800,000. But to the buyer who is paying 20 X net income, that \$400,000 swing can result in a purchase price adjustment of \$8 million. For that reason alone it seems unrealistic for the acquiror to consider itself a general purpose user with the same materiality range as the potential investor or creditor.

#### INVENTORY AND RECEIVABLES

Here the materiality level reflected in the financial statements has an even greater impact. For the general purpose user, Universal Widget could have net accounts receivable that vary anywhere from 417,600,000 to \$18,400,000 and still be within the range of fair presentation contemplated by GAAP. Similarly, inventory might range from \$22,700,000 to \$23,300,000 without causing the auditor to qualify his opinion in any respect. But from the point of view of the acquiror, which has specific needs and concerns with respect to operation of the business and which believes it has paid for specific balance sheet value, this range may be entirely unacceptable.

Of course, in the real world, the acquiror typically acknowledges its special purpose needs by conducting its own due diligence investigation of Universal Widget. In that connection, it will frequently have operating personnel conduct a detailed examination of the inventory at specific locations and have accounting personnel review accounts receivable. Consolidated may even have its own auditors conduct an acquisition review that might include examining the work papers of the auditors who reported on the financial statements of Universal Widget.

In the authors' experience, however, none of that due diligence is reflected in the representations that are exacted from the selling company or its shareholders. Whatever Consolidated's auditors may have learned about the materiality level established in the audit of Universal, they will keep between themselves and their client (assuming they even tell Consolidated about something they may consider a technical issue of no business relevance). The representations Consolidated will require from Universal will continue to be the kinds of general representations that do not reflect or acknowledge specific needs or concerns of the acquiror.

If disputes develop over the next few years with respect to adequacy of reserves for accounts receivable, obsolescence of inventory, or even net income, a battle will ensue over the representations contained in the acquisition agreement. In the worst of

cases, Universal or its shareholders may have to explain to a jury or an arbitrator why Consolidated should have paid 20 X reported net income when that net income and material balance sheet items were "misrepresented."

#### THE SELLER'S APPROACH

There are some normal provisions of the acquisition agreement that partially address these issues. One common provision is a "de minimis" provision that precludes assertions of breach of representation or warranty for problems that do not exceed a certain dollar amount. Typically, however, those provisions have a threshold far too low to deal with the kind of problems discussed above.

Another common provision that the seller frequently tries to obtain is an acknowledgement that the acquiror has done its own due diligence and made its own investigation with respect to the company. While theoretically useful, in practice this kind of provision simply results in another battleground on which the litigation is fought: what did the acquiror know regarding the financial statement issues it now complains of, or in the exercise of reasonable diligence what should the acquiror have found out?

The authors' believe that a different approach is required to deal with the problem effectively. The approach begins with a comprehensive dialogue between the seller and its auditors with respect to the materiality criteria used, the scope of the audit, and the adjustments proposed but not made during each of the audit years subject to the financial statement representations.

In the hypothetical example, one should not assume that senior management of Universal Widget even knew what the materiality threshold was, or knew of the adjustments that the auditors may have considered, but did not require. Many auditors do not discuss the materiality threshold with the client while they conduct their audit, considering it to be a part of the audit plan, which is not normally shared with the client. Moreover, in many cases adjustments proposed but not made are discussed at a level within the seller's organization well below the Chief Financial Officer and/or Chief Operating Officer. In short, it frequently will surprise senior management of Universal Widget as much as it will later surprise senior management of Consolidated Industries that there was a possible additional reserve of \$800,000 for accounts receivable that the company could have posted to the general ledger in fiscal 1990, or a \$600,000 obsolescence problem in inventory that the company never posted to the general ledger in 1989. Unless the seller's senior management understands the nature of the audit process and the materiality judgments that the auditors made, they cannot properly assess the kind of representations they should be able to make.

Following discussion with its auditors regarding these issues, Universal Widget's senior management may face a business issue it must consider in connection with the acquisition agreement. How much of this information does management wish to communicate and document in the acquisition agreement? For example, the seller could add the following clause to the financial statement warranties that would alert the acquiror to the nature of these issues:

The financial statements were prepared for use by general purpose users and accordingly reflected assessments of materiality which we consider to be reasonable and appropriate for such use. You have conducted your own examination of the financial

statements and supporting information and have made your own determination of whether those materiality levels are appropriate or reasonable for your purposes.

Certainly, where the acquiror has undertaken its own investigation and reviewed the work papers of Universal's auditors, the seller should attempt to negotiate such a provision.

A more difficult business problem is presented when the acquiror has not undertaken that level of diligence. In these circumstances, Universal may be inviting closer scrutiny of the financial statements that could result in renegotiation of the price. If the acquiror now begins to realize that, for its purposes, some \$400,000 per year of net income, \$800,000 of receivables and \$600,000 of inventory may not be realizable, the value it places on the business may be different from its initial valuation. That is a business issue the seller and its attorneys must consider in deciding whether to use the standard form representations.

#### THE AUDITOR'S APPROACH

For the auditor such "business" considerations are not an acceptable basis for evaluating professional responsibility. The issues facing the auditor come in two contexts: first, where the company has issued and the auditors have reported on the financial statements before the acquiror appears on the scene; and second, where the auditors are conducting an audit at the time the acquiror appears on the scene.

When the company has issued and the auditors have reported on the financial statements, nothing in the professional literature requires the auditor to consider withdrawing or modifying his report simply because the client is considering a sale of the company. Suppose, however, that the acquisition agreement requires a comfort letter from the auditor as a condition of the closing--not an uncommon provision. Here, in effect, the auditors are expected to reconfirm their outstanding opinion regarding the financial statements to a new user who was not known to them when they initially reported. Based on the analysis set out above, the authors' recommend that the auditor called upon to issue a comfort letter in these circumstances should make the acquiror aware of the issue of general purpose vs. special purpose use. Language such as the following serves that purpose:

In issuing our reports dated [underscore] and [underscore] on the financial statements dated [underscore] and [underscore], we understood that the financial statements would be used by general purpose users, as contemplated by accounting literature. Accordingly, the scope and extent of our procedures and the levels of materiality that were reflected in the financial statements were based on our assessments of the needs of such general purpose users. Because your own needs may involve specific objectives not contemplated by us during the course of our audit, these assessments may not be suitable for your purposes.

This language is designed to alert the acquiror to its responsibility to determine whether the thresholds of materiality and level of audit investigation contemplated by a general purpose audit are truly sufficient for its expectations and objectives. If the authors' argument that the acquiror is a special purpose user is correct, then there is no reason--either professional or legal--why the auditors should be obliged to assume the burden of judging whether financial statements prepared for general use, and an audit conducted with the general user in mind, are sufficient for the acquiror's special purposes.

When the auditor is conducting an audit at the time the parties are negotiating the acquisition transaction, the problem becomes more complex. Legal as well as professional issues present themselves. Even in jurisdictions where the privity rule applies, an auditor who is put on notice that a specific user intends to rely on his work product and who acknowledges that intention, assumes a duty to that user. (6) If, as the authors argue, that user is a special purpose user, how does the auditor develop a materiality standard and plan the scope and extent of his engagement?

The question is even more complex if there are other general users still in the picture. Assume, for example, that Universal Widget is a reporting company under the Securities Exchange Act of 1934 and has filed financial statements regularly as part of its Annual Report on Form 10-K. If the auditor decides to use a lower materiality standard and expand the scope of his audit in order to accommodate the special purpose needs of the potential acquiror, might that raise consistency issues regarding the financial statements for the prior year?

Although the AICPA has eliminated the reference to consistency from the revised standard form of auditor report, it is a basis of GAAP that financial statements are reported on a basis consistent with prior years; where that is not the case, the auditor is required to indicate that in his report. (7) If the auditor dramatically reduces materiality levels and expands the scope of the audit in certain areas, he is likely to propose adjustments in the current year that he would have "passed" in prior years. In order to maintain consistency, will it be necessary to restate prior year financial statements to reflect similar adjustments?

Even if the auditor wishes to establish a lower level of materiality and an expansion of audit scope, it may be impossible to do that without specific concurrence of both the client and the acquiror. In the case of general purpose financial statements, the auditor makes judgments as to the scope of materiality based on his own consideration of the reasonable needs of users in the business marketplace. (8) Where there is a specific user in view, however, it would seem dangerous for the auditor to simply speculate as to what level of materiality the acquiror would consider useful for its needs.

A key issue here is the question of cost. In setting materiality levels for general purpose financial statements, the auditor is entitled to consider the question of cost to the company incurred in expanding the scope of audit procedure in order to reduce audit risk. (9) How does the auditor make that cost-effectiveness judgment when there is a specific user who may be perfectly happy to have the company incur substantial costs in order to satisfy that user's needs? The issue is not an easy one to resolve.

The authors' recommendation is for the auditor to continue conducting his audit on the basis of materiality levels and audit scope that he considers appropriate for general purpose users. The seller, however, should expressly inform the acquiror of that, and should allow the acquiror to indicate whether it wishes auditors to prepare special purpose reports in connection with specific items of the financial statements. Either the seller's regular auditors or the acquiror's auditors can conduct these special purpose audits. (10) In any event, the seller's auditor should be able to express in the report on the financial statements delivered to the acquiror a disclosure much like that indicated above for the comfort letter:

In issuing our reports dated [underscore] and [underscore] on the financial statements dated [underscore] and [underscore], we understood that the financial statements would be used by general purpose users, as contemplated by accounting literature. Accordingly, the scope and extent of our procedures and the levels of materiality that were considered in conducting our audit of the financial statements were based on our assessments of the needs of such general purpose users. Because your own needs may involve specific objectives not contemplated by us during the course of our audit, these assessments may not be suitable for your purposes.

#### SUMMARY

Companies generally prepare financial statements for the general purpose user. In an acquisition transaction, however, the acquiror is actually a special purpose user, with needs and objectives that often go beyond those contemplated by general purpose financial statements. For that reason, normal determinations of materiality and related determinations of audit scope may not be adequate for the acquiror's purposes. Financial statement representations in acquisition agreements should acknowledge that. Reports delivered by auditors in acquisition transactions--whether comfort letters or audit reports--should alert the special purpose user to the fact that it may have particular needs that general purpose financial statements or the normal audit scope may not adequately address.

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- (1) \*FASB\* Statement of Financial Accounting Concepts No. 1, [paragraph] 34.
- (2) Id. [paragraph] 5.

(3) \*FASB\* Statement of Financial Accounting Concepts No. 2, Glossary; TSC Industries, Inc. v. Northway, Inc., 426 U.S. 438, 449 (1976); Basic Inc. v. Levinson, 485 U.S. 224, 231 (1988).

(4) Codification of Accounting Standards and Procedures, Statements on Auditing Standards [subsection] 311.03; 312.10-11 (Am. Inst. of Certified Pub. Accountants 1989) [hereinafter AU].

(5) See, e.g., TPI Expects Siemens to Pay it \$40 Million Following a Ruling, Wall St. J., Mar. 18, 1991, at A3. Siemens AG sought \$203 million in adjustments for overstatements in financial statements of TPI Enterprises, whose assets it purchased for \$165 million.

(6) See, e.g., Credit Alliance Corp. v. Arthur Andersen & Co., 65 N.Y.2d 536, 483 N.E.2d 110, 493 N.Y.S.2d 435 (1985).

- (7) AU [section] 150.02.

- (8) AU [section] 312.06

- (9) AU [subsection] 312.03, 350.08.

(10) See AU [section] 623.11 (discusses reports on specified elements of a financial statement, such as accounts receivable or inventory).

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Understanding entity and display - The second statement of federal financial accounting concepts

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ABSTRACT: The Federal \*Accounting\* \*Standards\* Advisory \*Board\* (FASAB) has issued a second statement of \*financial\* \*accounting\* concepts for the federal government, which has been adopted by OMB, GAO and Treasury. It identifies the types of entities for which there ought to be financial reports and the types of information the entities should display in their financial reports. This article explains this statement of federal financial accounting concepts.

TEXT: In mid 1993, the Federal \*Accounting\* \*Standards\* Advisory \*Board\* (FASAB) recommended the first statement of \*financial\* \*accounting\* concepts(1) for the federal government, which was adopted by the Office of Management and Budget (OMB), the General Accounting Office (GAO) and Department of the Treasury. The statement defines the objectives of financial reporting for the federal government. The objectives reflect (1) the environment in which the federal government functions and must be responsive to and (2) the needs of those who would use the financial statements of the federal government and its agencies. The federal objectives are obviously different than those of financial reporting for for-profit entities and even for state and local governments. The latter operate in and must be responsive to different environments; for their financial statements, there are different users with different needs.

FASAB has now issued a second statement of financial accounting concepts for the federal government, which has been adopted by OMB, GAO and Treasury. It identifies the types of entities for which there ought to be financial reports and the types of information the entities should display in their financial reports. Hence, the statement is titled Entity and Display. The purpose of this article is to explain this statement of

federal financial accounting concepts (which, for purposes of this article, might also be called Entity and Display, the Statement, or the concepts statement).(2)

### ESTABLISHING THE REPORTING ENTITY

A basic postulate of accounting is that accounting information pertains to entities, i. e., circumscribed legal, administrative, fiduciary or other organizational structures. The first question, therefore, is who, in the federal government, should be the reporting entities.

The simplistic answer is "the entire federal government," but that is only part of the answer. The Chief Financial Officers Act directed the issuance of financial statements by individual agencies, funds and activities. The authorities and responsibilities for safeguarding and expending resources, and therefore the accountability for reporting this stewardship, is found within individual agencies. The only way to obtain a financial report for the entire government is to build it up from the financial reports of individual components.

Moreover, a clear understanding of what the reporting entity should entail helps to establish what information is relevant to the financial statements and which information is not. This ensures that the users of the entity's financial reports are provided with all the information that is relevant to the reporting entity, subject to cost and time constraints.

### THE BASIS FOR SELECTING REPORT ENTITIES

The Statement discussed three possibilities for the reporting entities. The first was the budget accounts, i.e., the expenditure (appropriations or fund) accounts and the receipt (including offsetting receipt) accounts contained in appropriations statutes. The rationale was that the agencies are required by law to account for and report their financial activities by budget account; any other information is supplemental. However, it was felt that the scope of the budget accounts is too limited and financial statements that reflected solely the information contained in a budget account would not be meaningful. Moreover, the size of budget accounts vary from very small accounts, which are used to constrain management, to very large accounts, which are used to finance many activities. This lack of sufficient consistency makes it difficult to universally consider budget accounts as the basic reporting entity.

The second possibility considered was programs or activities, i. e., the services the agencies provide and the specific lines of work they perform. Unfortunately, there is no firm definition for the term "program," it varies in the eye of the beholder. For example, the highway program could relate to the entire federal highway program, the program to build interstate highways (in contrast to city streets, secondary roads, etc.) or a program to build a highway between two specific points. Also, the term "program" is often used interchangeably with the terms "function" and "subfunction." Generally, however, the term "function" would be used only for the functions defined in the budget. Otherwise, the term "program" would be used. Therefore, with a diffuse management of the "programs" and the frequent difficulty of finding the person accountable for a program, it is not appropriate to consider programs as the basic reporting entity.

The third possibility is the organizations in the federal government that manage resources and are responsible for operations, i. e., delivering services. These would include the major departments and independent agencies, which are generally divided into smaller organizational units with a wide variety of titles. These include bureaus, administrations, agencies, services and corporations, which are further divided into even smaller sub-organizations; and other small agencies which are not necessarily divided into smaller units. Entity and Display concludes that organizations should be the primary financial reporting entity in the federal government. It recognizes that organizations, budget accounts and programs frequently overlap. Many programs are financed by more than one budget account some of which are not under the control of the organization administering the program; some programs are administered by more than one organization; a single organization or budget account could be responsible for several programs; and some of the support necessary to perform a program is frequently provided by other organizations and/or financed by other budget accounts, all of which could complicate financial reporting. However, the association of data with the responsibility centers, revenue centers, profit centers, cost centers, etc., which managers typically use for organizing and operating their activities permit:

\* aggregating information or both the organization and for one or more of the programs performed by the organization and one or more of the budget accounts for which the organization is responsible, and

\* the subsequent arranging of the information not only by organization, but also by program and / or budget accounts.

This approach to defining reporting entities supports establishing accountability in the organizations while still enabling the organizations to provide information pertaining to their programs. Specifying the organization as the basic reporting entity does not mean that all organizational entities should be reporting entities. The statement also recommends that to be a reporting entity:

\* there should be a manager responsible for controlling and deploying resources, producing outputs and outcomes, executing the budget or a portion thereof (assuming that the entity is included in the budget) and accountable for the entity's performance;

\* the entity's scope should be such that its financial statements would provide a meaningful representations of operations and financial condition and:

\* there are likely to be users of the entity's financial statements who are interested in and could use the information in the statements to help them make resource allocation and other decisions, and hold the entity accountable for its deployment and use of resources.

Thus, in applying the statement of concepts, the departments and major independent agencies are likely to be the primary reporting entities, and the aggregations on information by these organizations is likely to be accompanied by aggregations of information for their sub-organization entities--bureaus, Administrations or agencies--as well. This approach can provide a better understanding of the financial results and status of the many individual sub-organizations and programs constituting a department or major independent agency. It can reveal instances where programs are carried out by several suborganizations within the department or major independent agency

Also, trust funds and revolving funds, which are aggregations of budget accounts, are usually administered by a single organization. For financial reporting purposes, they can be reported as a component of the organization that administers the fund in the same manner that a sub-organization or other type of budget account is a component of the organization. (This approach need not preclude separate reporting for a trust fund or revolving fund by the organization that manages it in instances where there is sufficient interest.)

The ultimate aggregation of organizational reporting entities would be the entire federal government: which, in reality, is the only independent economic entity--although some would say the entire country is the ultimate economic entity.

#### DETERMINING THE MAKE-UP OF THE REPORTING ENTITIES

Specifying that an organization is the basic financial reporting entity is but the first step. The next step is defining what should be considered part of that reporting entity. The statement recommends two types of criteria. The first is a "conclusive" criterion. In other words, there is an inherent conclusion that for financial reporting purposes, any organization that meets the conclusive criterion is part of a specified larger entity.

The conclusive criterion is appearance in the federal budget section entitled "Federal Programs by Agency and Account." Any organization, program, or budget account, including of budget accounts and government corporations, included in that section would be considered part of the U. S. government, as well as part of the organization with which it appears. (T1--is does not include non-federal entities that receive a subsidy. The receipt of a subsidy does not require the recipient to be included in the financial statements of the organization or program that provides the subsidy.)

The second type of criteria are "indicative" criteria. Indicative criteria are needed because of instances when, for political or other reasons, an organization (including a government corporation), program or account is not listed in the "Federal Programs by Agency and Account." In these instances, a general purpose financial report would be misleading or incomplete in regard to the objectives for federal financial reporting if the organization, program or account were not included therein. The indicative criteria, of which there are several, would be considered in the aggregate for deciding whether an organization, program or account would be considered and reported, for financial reporting purposes, as part of a larger reporting entity.

The indicative criteria are as follows:

- \* Exercises any sovereign power of the government to carry out federal functions, e. g. power to collect taxes, fines, etc.; use police powers; or borrow funds government use.

- \* Is owned by the federal government, particularly if the ownership is of the organization and not just the property.

- \* Is subject to the direct or continuing administrative control of the reporting entity, e. g., able to select or remove the governing authority or designate management; authority to review and modify or approve budget requests; ability to veto, overrule or modify governing body decisions or otherwise significantly influence normal operations; approval of hiring, reassignment and removal of key personnel.

- \* Carries out federal missions and objectives.

\* Determines the outcome or disposition of matters affecting the recipients of federal services. Has a fiduciary relationship with the reporting entity

\* The criteria are likely to remain in existence or a time, i. e., the interest in the entity and its governmental characteristics is more than fleeting.

\* The criteria notwithstanding, the statement specifies that the Federal Reserve System is not part of the federal government entity--due to its traditional separation and independence from the central government organization and functions. Nor are the government sponsored enterprises (GSE) since they are not included in the budget section "Federal Programs by Agency and Account" and do not function in a manner consistent with the indicative criteria; or any of the entities the federal government occasionally bails out, e. g., guarantees or pays debt.

The concepts statement also addressed other aspects concerning the completeness of the reporting entity in order to ensure that the users of a reporting entity's financial reports are provided with all the information relevant to the reporting entity. Specifically, the statement reiterated that in the government, the entire federal government is the only independent economic entity, and thus resources or services are often provided between components in the government without a quid pro quo. Examples are a portion of federal employees retirement costs, which are reported by the Office of Personnel Management rather than the organizational entities employing the persons; and support services, such as computer support, which is provided by other reporting entities. The above notwithstanding, a reporting entity's financial reports should include all amounts attributable to the reporting entity's activities, even though they are recorded elsewhere.

Moreover, consideration should be given to considering the interest expense that is inherent in devoting a sum of capital to an organization or program as one of the costs incurred to operate the organization or perform the program. This concept has already been adopted for the accounting for loans and loan guarantees. It might be desirable to consider the concept for the financing necessary for other types of assets such as inventories of materials or fixed assets.

#### DISPLAYING FINANCIAL INFORMATION

Another basic accounting postulate is that entities use financial reports to communicate financial and related information about the entity to persons concerned with the entity. Accordingly, Entity and Display also contains a recommended conceptual framework for displaying the federal government's (and its agencies') financial information. The statement enunciates that while financial statements represent the principal means of communicating accounting information about an entity's resources, obligations, revenues, costs, etc. to those outside the entity,

(1) the statements may contain information from sources other than accounting records and

(2) management may communicate information to those outside the entity using financial reporting other than financial statements, either because the information is required to be disclosed by statute, regulation, or custom; or because management believes the information would be useful to those outside the entity and discloses it voluntarily. Also, although there are several objectives for financial reporting in the federal government, each of the objectives can be primarily met by one or more of the

recommended statements for one type of entity and to a lesser degree by the recommended statements for the other types of entities, and the totality of the objectives can be met by the totality of the statements. Specifically, there are two types of financial statements. One, called a stock statement, presents financial information for an entity as of a point in time.

The typical stock statement is a balance sheet. It would display such information as fund balance with treasury, cash and other monetary assets, investments, receivables, inventories and related properties, property, plant and equipment, liabilities and the entity's net position.

To present information about an entity's revenues, receipts, expenditures, expenses, gains, losses, and/or other changes in net resources during a period, a flow statement is used. The traditional flow statement is a statement of operations and changes in net position. It presents the results of an entity's operations for a reporting period, including the changes in its net position from the end of the prior reporting period. This type of statement is particularly useful for private sector, profit-seeking organizations since their objective is to generate earnings and returns on investment. The statement of operations and changes in net position presents the revenues the entity receives, the expenses incurred to generate the revenues, the amount left for the entity's owners and the resulting effect on the owners' equity.

The federal government is a spending entity, however, whose objective is to provide services. Some of the services are financed by monies received from the recipients of the services. Others are financed by taxes and other unearned revenues. Therefore, there are three kinds of useful information a flow statement could present.

The first kind of information is the -- total costs and the net costs of the entity's services, i. e., how much of the services was financed by the recipients and how much by the taxpayers. This information could be displayed in a statement of net costs.

The display of costs in a statement of net costs could be by program, object, class or any combination thereof. The manner in which the revenues would be displayed, however, would depend on the primary purpose of the program.

\* If the primary purpose of the program is to generate revenues, the appropriate way to display the revenues is as a deduction from the total costs of the program.

\* If the revenues are generated from administering an inherently governmental service, which indicates the revenues are a means to recover all or most of the costs of administering the program, rather than a primary consideration for the program, the revenues should be displayed as a deduction from the total costs of the organization, not the program.

\* If the revenues are generated by providing a specific program, but are not a primary consideration in the conduct of the program, i. e., they are incidental to the purpose of the program (as in the sale of maps by the U.S. Geological Survey), the revenues should be deducted from the incremental costs incurred to provide the goods or services that generate the incidental revenues, to the extent that the incremental costs are measurable and relevant to decision making. Otherwise the revenues should be deducted from the program's or organization's total costs.

\* Insignificant earned revenues can be netted into the costs of the programs with the amounts disclosed in accompanying footnotes.

The organizational and program management costs that are necessary to operate the organization or program should be separately identified, either on the face of the financial statements or in the accompanying footnotes. This enables the use of these resources to be justified on their own merit.

The second kind of information to be displayed in a flow statement would relate to how the entity financed the net costs, i.e., with appropriations or with other types of non-exchange revenues such as fines, donations or transfers from other agencies, and how this financing affected the entity's net position. This information could be displayed with a statement of changes in net position, containing such items as net costs, appropriations used, non-exchange revenues, donations, transfers in, transfers out, imputed financing sources, prior period adjustments, increase (decrease) in unexpended appropriations, net position--beginning of the period and net position--end of the period.

The third type of information relates to the collection of the non-exchange revenues. It is important that the few agencies that function in a custodial capacity and collect the taxes, customs duties, royalty payments, fines, etc., provide an understanding of from whom the taxes or other monies were collected and to whom they were distributed. This could be achieved with a statement of custodial activities.

To meet the first objective of federal financial reporting, that is the budgetary integrity objective', entities would provide a statement of budgetary resources. The information displayed in such a statement would be the budgetary resources made available during the reporting period, the disposition of those resources and the outlays of the resources. Although this information already appears in other reports, the likelihood of auditor involvement with the information, once it is included in the general purpose financial statements, will provide heretofore missing assurance as to the reliability of the information.

Meeting the second objective of federal financial reporting requires information that helps readers determine the efforts and accomplishments associated with federal programs. Thus, Entity and Display recommends that each entity present one or more statements of program performance measures in which to display the significant service efforts and accomplishments measures for each of the entity's significant programs. The measures should relate to the programs' purposes and goals, and indeed, hopefully be the same as previously included in the budget document and other documents released to the public. The emphasis should be on output and outcome measures rather than workload, process or input measures. The measures should not be trivial; they should be considered important by decision makers, particularly the resource providers likely to use the financial statements.

Other information recommended for display by a reporting entity in the federal government are accompanying footnotes that are necessary to make the financial statements more informative and not misleading, a management discussion and analysis or overview that conveys general information about the reporting entity. Other necessary components are the required supplemental information pertaining to investments in education, training, research and development and certain types of property, plant and equipment that can affect the nation's future wealth. Also, the claims on future budgetary resources resulting from prior decisions and actions--information useful for meeting the third objective of federal financial reporting; and

other supplemental financial and management information that would support information in the overview or enhance the understanding of the entity's operations or financial condition.

The act of preparing the above statements and other information would serve to fulfill, at least in part, the fourth objective of federal financial reporting." Other ways that build on the audited financial reporting process would be a management assertion that would accompany the financial statements and/or an auditor's attestation on the financial statements.

In recommending the above array of financial statements and other information for organizations within the federal government, the concepts statement recognized that frequently, the activities of one or more programs or other components within the organization are as important to the readers of the financial statements as are the activities of the organization as a whole. It therefore recommended that larger organizations, and particularly those composed of many bureaus, administrations, agencies, etc., prepare not only consolidated financial statements for the organizational entity, but also provide information pertaining to their individual significant components. The information for the individual components could be provided with separate columns in consolidating financial statements, in separate financial statements for each significant component or in the accompanying footnotes. Furthermore, if one or more of the sub-organizations conducts a very visible or critical activity when there is a high level of public interest; maintains complex accounts with large fund flows; or has major fiduciary responsibilities; or its financial viability is of special concern to the Executive Branch or the Congress, it may be desirable for the suborganization to prepare and issue a separate financial statement.

Since the components of a reporting entity are likely to conduct transactions with other components in the reporting entity, as well as other federal entities, and are likely to have assets due from and liabilities due to other federal components and entities, it is conceptually desirable to eliminate intra-entity transactions and balances. However, since eliminations may not always be practical, consideration should be given to the utility of the information if the intra-entity balances are not eliminated, the misunderstanding that might result if the balances are not eliminated and the cost-benefit of making the eliminations.

Finally, the array of financial statements recommended for the entire federal government is not too different than the array for the individual organizations. The major differences are that (1) the three flow statements recommended for the individual organizations would be combined into one statement of operations or net costs, and (2) the statement of budgetary resources would be replaced with a comparison of budgeted and actual use of resources and a reconciliation of the accrual-based operating results with the budget-based operating results.

## CONCLUSION

Many of the individuals on the task force that drafted the concepts statement for FASAB said this was the hardest assignment in their professional careers. The absence of a consistent approach in establishing accounting and related structures over the years made it very difficult to determine how to define a reporting entity for financial reporting purposes. The need to avoid recommending an overwhelming number of

financial reports, even though the amount of financial information to report is overwhelming, represented another difficult challenge.

At the same time, they recognized that the Entity and Display concepts statement could well be one of the most important products of the recent efforts to improve financial management in the federal government. It would establish the foundation for who would do financial reporting and what and how they would report financial information. The FASAB is to be commended for issuing such a comprehensive and explicit statement.

#### END NOTES

1 Statements of federal financial accounting concepts differ from statements of federal accounting standards which, when issued, represent generally accepted accounting principles for the U. S. government and its agencies. Statements of financial accounting concepts are intended to guide the deliberations and other actions entailed in developing accounting standards.

2 The article summarizes the significant portions of the statement of financial accounting concepts. For a complete understanding of all aspects of the concepts statement, the reader should refer to Statement of Federal Financial Accounting Concepts No. 2, "Entity and Display," issued by the Office of Management and Budget.

3 Federal financial reporting should assist in fulfilling the government's duty to be publicly accountable for monies raised through taxes and other means and for their expenditure in accordance with the appropriations laws that establish the government's budget for a particular fiscal year and related laws and regulations. Statement of Federal Financial Accounting Concepts (SFFAC) No. 1, "Objectives of Federal Financial Reporting."

4 Federal financial reporting should assist report users in evaluating the service efforts, costs and accomplishments of the reporting entity; the manner in which these efforts and accomplishments have been financed; and the management of the entity's assets and liabilities. Statement of Federal Financial Accounting Concepts (SFFAC) No. 1, "Objectives of Federal Financial Reporting."

5 Federal financial reporting should assist report users in assessing the impact on the country of the government's operations and investments for the period and how, as a result, the government's and the nation's financial conditions have changed and may change in the future. Statement of Federal Financial Accounting Concepts (SFFAC) No. 1, "Objectives of Federal Financial Reporting."

6 Federal financial reporting should assist report users in understanding whether financial management systems and internal accounting and administrative controls are adequate to ensure proper execution of \*transactions\*, safeguard assets and support performance measurement. \*Statement\* of Federal \*Financial\* \*Accounting\* Concepts (SFFAC) No. 1, "Objectives of Federal Financial Reporting."

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**Hunting down the hackers**

Bird, Jane

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**ABSTRACT:** Computer crime in the UK has doubled every year during the past decade and has cost businesses millions of pounds. The damage computer hackers can inflict ranges from corruption, theft or destruction of data to the planting of computer viruses or diverting of funds. A recent DTI survey of 832 UK businesses found that security lapses have cost £1.2 billion since 1992. Much of the growth in computer crime is due to increased use of networks which multiply the number of potential entry points. Surprisingly, many organizations still do not take the problems of computer security seriously. There are numerous technical weapons for defense. Some 350 companies sell computer security products ranging from virus vaccines to disk encryption systems that ensure disks cannot be read by unauthorized personnel.

**TEXT:** Steven Bellovin is paid to think like a computer hacker. As head of network security at AT&T, his job is to prowl around the telecom giant's labyrinthine electronic corridors looking for hidden doors and windows through which invisible imposters might sneak. It is not an idle pastime -- AT&T is subject to a serious hacking incident at least once a week. 'Extremely serious attacks happen once a month,' says Bellovin. The damage such intruders can inflict ranges from corruption, theft or destruction of data to the planting of computer viruses or diverting of funds

Bellovin's task is to anticipate the hackers' moves and the technical weapons they might deploy, so that AT&T's defences can be effective against new forms of attack. It is a challenging job because hackers vary their tactics and update their armoury as rapidly as the viruses they plant can mutate. Most of them are socially inadequate young males, but what they lack in social skills, they make up for in malicious action. Donning pseudonyms such as Dark Invader, Byte Ripper and Captain Zap, their goal is to rule the global data superhighways of the future.

So when Bellovin spotted a hacker on AT&T's computer system in January 1991 he decided he would monitor the imposter's activities instead of shutting him out. The hacker had broken in via Internet, the world's largest computer network, which links approximately 20 million users worldwide. Pioneered by universities, it was designed to give as many people as possible free access to information. Hence its vulnerability to abuse by hackers. Internet is increasingly used by companies, financial institutions and government departments to exchange information, place orders and, in some cases, make payments.

For the next four months, the hacker, known as 'Berferd', used AT&T's computer as a springboard to attack numerous other organisations on Internet. The culmination came on 1 May, when he assaulted some 300 computers in one night, including ministries and military sites. By then, Bellovin knew the identity of the caller, but nothing could be done because at that time hacking was legal in the Netherlands, where the hacker lived. Within a few days, AT&T's lawyers decided to shut Berferd out, fearing that the company would be accused of harbouring hackers. But the Dutch authorities let him continue for a further year until their own machines were attacked.

Bellovin was shocked by Berferd's huge arsenal. But it came as little surprise to detective inspector John Austen, who set up the computer crime unit at New Scotland Yard 10 years ago. Computer crime in the UK, including hacking, has doubled every year during the past decade, says Austen. A recent DTI survey of 832 UK businesses found that security lapses have cost £1.2 billion since 1992. Some 57% of respondents reported incidents

involving 'logic' security -- software viruses or hacking compared with 35% in 1992. The cost of the average security breakdown rocketed from an average of £2,000 to £9,000, with the single most costly incident a £1.2 million fraud in an insurance company.

Much of the growth in computer crime is due to increased use of networks which multiply the number of potential entry points. 'As more and more companies join computer networks they are becoming increasingly vulnerable to hacker attack,' says Bellovin. Some hackers are just casual snoopers who simply cause a nuisance. But most want to secure a back door so that they can get back into the machine - the equivalent of digging a tunnel from the inside out. 'If they think they have been detected, they'll frequently wipe all your files to destroy any incriminating traces they may have left behind.'

Networks also provide a highly effective communications channel for hackers to exchange information about penetrating systems. Victims of hacking tend to think that they have had bad luck and it won't happen again says Gaetano Gangemi, director of secure systems at Wang, the US office systems supplier 'But once the original perpetrator has had a good look round, he will often post details of his attack on an electronic bulletin board. At this point the victim experiences an exponential increase in the number of onslaughts.'

The obvious attacks are often the least damaging because victims can respond fast. More insidious are the secret visitors who leave no trail. One of the biggest shocks to Bellovin was that when he reported the activities of Berferd to the 300 organisations that had been hit, only two or three had been aware of the incident.

Austen's casebook catalogues everything from the fairly harmless browser, the equivalent of someone who peeks through windows and tries doorknobs, to international gangs of criminals who steal data, destroy system and divert funds. Industrial espionage is a common motive for computer crime, he says. 'This may involve the theft of customer lists, sales know-how, or R&D plans.' The perpetrators range from individual employees who take data and sell it on to third parties, to international gangs of information traders and launderers, says Austen.

Organised criminals have been exploiting the potential of computer networks since the 1980s, when a group of West German hackers was persuaded by the KGB to penetrate government, military and commercial databases. The information was then downloaded to the eastern bloc.

Often the goal of organised hackers is to divert funds. A team in Switzerland hacked into the bank account of a wealthy individual to discover details of how his money was transferred and then defrauded him of £1 million.

Many cases of computer fraud involve insiders who use hacking techniques in combination with other inside information. In a recent case in north London a man planted a bugging and transmitter device while working on a short-term contract for a small oil company. He also cloned a plastic card that gave access to the computer room. Then he and a partner rented a flat opposite the company offices, within the 2,000 metre transmitter range of the bug. The pair captured all the passwords used on the system and re-entered the premises with the card at night. They then copied details of all the company's customers, distribution outlets, prices and grades of oil, and attempted to sell the information to rival companies. They also set up a purchase account and stole £400,000 by creating false invoices.

Many such cases go unreported even to the police because organisations are terrified about the consequences of lost credibility should the security breach become known.

But according to Austen, industrial espionage is almost a more significant problem than the diverting of funds. 'We've had cases involving all types of information, especially the results of R&D tests for new products ranging from cars to washing machine powder. 'There are people who actually advertise that they can gain information about others,' says Austen. 'These

people call themselves information traders or information brokers and advertise that for payment they will obtain information about international companies, institutions and individuals.' They operate alone or in teams, and often exploit networks such as Internet. Some specialise in the loopholes of specific hardware and software products, others focus on the fast-growing breed of open systems that are designed for easier computer communications but also increase the opportunities for hackers.

Martin Samociuk, joint managing director of London-based Network Security Management, a computer fraud consultancy, cites a UK shipping company that paid a hacker to penetrate a rival company's databases to steal competitive information including business strategy, customer lists and tariff details. 'The hacker was hired by a manager and the company subsequently claimed that it had been unaware of the source of the information,' Samociuk says.

Computer viruses are another invisible menace. These are programs that can cripple or destroy computer data. The most virulent strains can now mutate in billions of ways to escape detection and render themselves immune to software 'vaccines'. Sometimes they can lurk undetected inside a victim's system for months. They are triggered by a predetermined event such as the anniversary of Michelangelo's birthdate, or the next Friday 13th. Other viruses gnaw away imperceptibly at data, until, by the time the victim realises something is wrong, huge tracts of information may be unusable. Recently, Austen has begun to encounter a new virus known as Pathogen, which disables keyboards and destroys data. 'We don't want to create too much panic about it because incidences are fairly rare at the moment, but these cases are a great nuisance to users.'

According to IBM, there are currently some 2,000 viruses in circulation, and the incidence rate is roughly two per 1,000 PCs each year. Large companies can probably cope because most viruses will not occur on business critical systems, says IBM's Mark Drew, a computer security consultant. But small companies are very vulnerable. 'If they have only a few machines the chances are that they will all be critical to the operation of the business. Their first incident could well be the 'biggy' that everyone assumes can't happen to them.'

Surprisingly, many organisations still do not take the problems of computer security seriously. Four out of five respondents to a recent DTI survey on breaches of security experienced at least one security breach over the past two years, yet only half of them had a plan to deal with the aftershock. Even organisations that have known security losses are often unwilling to spend what it would cost to make them secure, says Gangemi. 'Their attitude is that they just want to be seen to be taking due diligence, though they know it won't solve the problem.'

To raise awareness and provide guidance on how to thwart the hackers, Bellovin has just co-written Firewalls and Internet Security: Repelling the Wily Wacker, to be published in the UK in July. One danger is that people are using machines designed before the days of networking when security needs were simpler, he says. 'For example, lots of organisations don't monitor the number of failed password attempts. Hackers need to be stopped at the front door.'

Passwords are one of the weakest points in most security systems. Hackers can set up their machines to trawl dictionaries of foreign languages all through the night until they find a legitimate password. Bellovin recommends never choosing real words or variations of names, birthdates, or those of relatives and friends. Passwords should comprise mixed letters, numbers and punctuation marks in an oddball sequence of no fewer than eight characters. Even better are one-off passwords because they also protect against the risk of wire-tapping. Bellovin carries a digital beeper that emits a unique password every time he wants to access the computer.

More care should be taken over recruitment, says Samociuk. Many young people are now much more proficient in computer techniques than their bosses, because of the prevalence of computers in schools. 'Companies are still being naive about who they hire and are not taking care to check out peoples' backgrounds,' says Samociuk.

There are also numerous technical weapons for defence. Some 350 companies sell computer security products ranging from virus vaccines to disk encryption systems that ensure disks cannot be read by unauthorised personnel, even if they are stolen. 'Disks are so small and pocketable that you'd never have a chance if you depended on people not walking out with them,' says Gangemi.

But beware of depending on security devices alone. Tom Parker, principal consultant, ICL Secure Systems, says: 'It is easy to take two very good secure products and put them together and discover you've got no security at all.' People make the mistake of treating security in a mechanical way, says Parker. 'They think it's just a case of putting passwords on the system and pinning up a few notices or introducing some procedures.' They don't test them out, keep them up to date, or make sure that they are being obeyed.

Security precautions should be second nature to all employees. It is surprising how much information hackers can get over the phone by posing as telecoms engineers or by searching through rubbish bins to find useful data for helping log on to machines.

If you do spot hackers you should stop them in their tracks immediately because you don't know what damage they'll do if they suspect they're being watched, advises Bellovin. He does not recommend a Berferd-style surveillance operation. 'We had the luxury of the equipment, experience and staff to do it.' Once your system has been penetrated, you should also get a decontamination expert to inspect it for backdoors and booby traps ft behind by the hacker.

Finally, beware of the growing band of hackers who have turned respectable by setting themselves up as security consultants. Some are legitimate. But as Bellovin puts it: 'The worry is that they are not truly reformed and that they can't be trusted to keep your secrets.' Some are even suspected of being double agents engaged in espionage. Good security involves fathoming the minds of hackers. And it definitely involves not inviting them in at the front door.'

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